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ABSTRACT

Most school practitioners, policymakers, and patrons hold strong opinions on year-round education (YRE). This paper determines which of the various assertions made about YRE are supported by research findings and evaluation studies of YRE. Specifically, the paper summarizes and synthesizes what is currently known about the impact of YRE on important educational outcomes. It explores each of the following considerations: national trends in YRE; North Carolina trends in YRE; definitions of YRE; extended-year schedules (EYS); and alternative YRE schedules. Although research is incomplete and, in some cases, of questionable validity, some patterns have emerged. Prior research generally supports the following statements about the impact of YRE: (1) Students in YRE will maintain or improve their academic achievement, exhibit better attitudes toward school, improve their overall attendance, and drop out of school less often; (2) teachers will have somewhat better attitudes toward school, exhibit less absenteeism, feel more professional, and report greater stress while in session (but less burnout across the year); (3) a strong majority of parents will favor a well-implemented YRE program and a minority of parents will resist any YRE program; (4) vandalism and burglary of school property is likely to decrease slightly; (5) overall, single-track YRE programs cost the same or more than traditional programs; and (6) multitrack YRE programs can result in significant cost savings. Seven tables are included. Appendices contain three figures that illustrate various YRE schedules. (LMI)

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What Twenty Years of Educational Studies Reveal About Year-Round Education

School of Education
The University of North Carolina at Chapel Hill

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What Twenty Years of Educational Studies Reveal About Year-Round Education

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March, 1994

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Commissioned by the North Carolina Educational Policy Research Center
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Executive Summary

Introduction

Most school practitioners, policy makers, and patrons hold strong opinions--either for or against--year-round education (YRE). Proponents of YRE claim that it increases student learning, enhances teacher professionalism, maximizes use of school buildings, and costs far less than traditional schedules. Opponents of YRE counter claims that it has no impact on (or possibly even decreases) student learning, produces stress and "burn-out" for teachers and building administrators, seriously interferes with family vacations and other traditional summer activities, and costs as much or more than traditional schedules.

The purpose of this paper is to determine which of these various assertions about YRE are supported by the findings of prior research and evaluation studies of YRE. Specifically, the paper summarizes and synthesizes what is currently known about the efforts of YRE on important educational outcomes. The paper aspires to provide school administrators and policy makers with a nonpartisan template against which to judge the claims advanced by both YRE advocates and adversaries. Such knowledge should prove helpful to all individuals presently considering the future role YRE might play in their districts.

Prior to summarizing the findings of previous studies, this paper explores each of the considerations summarized briefly below.

National trends in YRE. Despite recent moves by some large school districts (e.g., Los Angeles) to eliminate single-track YRE programs, the overall trend for YRE programs--and especially for multi-track YRE programs--shows dramatic increases, especially in states experiencing both swelling enrollments and shrinking education budgets.

North Carolina trends in YRE. Interest in YRE is also clearly increasing in North Carolina and the number of programs is on the rise, although it appears that organized opposition to YRE is beginning to emerge in the state.

Defining YRE. YRE is not one specific plan, but rather any reorganization of the school calendar into several instructional blocks, interspersed with shorter and more frequent vacation breaks than is true of the traditional calendar, to make learning more continuous. Two general types of YRE plans are unified attendance (e.g., a single-track 45-15 plan, where all students attend during a 45-school-day period, then all vacation for 15 school days), and staggered attendance (e.g., a four-track 45-15 plan where each track attends on the 45 days on, 15 days off schedule, but is staggered so only three tracks are in school at any one time).

Extended-Year Schedules (EYS). Whereas YRE schedules focus on how to divide the traditional number of days in a school year, EYS aim at increasing the number of days students spend in school. Although not the main topic of this paper, a few observations about EYS are provided.

Alternative YRE Schedules. Nineteen alternative YRE schedules are listed and the most common ones are noted. Three common schedules are described as examples.

Summarizing evidence from prior studies of YRE. The paper describes problems in extracting information from non-programmatic, loosely related studies, which is the case with prior YRE studies. Because the earlier research on YRE is incomplete and the validity of some studies cannot be determined from he research reports, the conclusions offered in the following section are somewhat tentative. Yet the patterns and trends that emerged when the studies were summarized are seen as the best guide available currently (or likely to be available in the near future) to those who need to make decisions about YRE.

What Claims About YRE Are Substantiated by Prior Research?

Prior studies generally support the following statements about the impact of YRE:

Impact of YRE on students

- Students in YRE will do as well or better in academic achievement.
- Students in YRE will likely exhibit better attitudes toward school.
- Attendance of YRE Students will be slightly better overall, but not in summer.
- Somewhat fewer YRE students will drop out of school.

Impact of YRE on teachers

- Teachers on YRE schedules will have somewhat better attitudes toward school.
- Teachers on YRE schedules will exhibit less absenteeism.

- YRE teachers will feel more professional and better rewarded financially.
- YRE teachers will report greater stress while in session, but less "burnout" across the year.
- "Off-track" YRE teachers will be available as qualified substitutes.

Impact of YRE on school administration/governance

Findings in this area are too preliminary to support even tentative conclusions.

Impact of YRE on parent attitudes

- A strong majority of parents will favor a well-implemented YRE program, while half or slightly less will favor a poorly implemented YRE program.
- A minority of parents will resist any YRE program, regardless of how well it is implemented.

Impact of YRE on the school or community

- Vandalism and burglary of school property is likely to decrease somewhat under YRE.

Impact of YRE on costs

- Overall, single-track YRE programs cost the same or more than traditional programs.
- Adopting multi-track YRE programs can result in significant cost savings (2-8% savings estimated for a typical program and up to 15% in well-implemented, multi-track YRE programs).
- Cost savings for multi-track YRE programs lie in costs saved by not constructing and staffing new schools; on-going annual operating costs for such schools are about the same as for traditional programs

Caution: The prior studies do not support claims about YRE beyond those summarized here. These tentative conclusions assume that the YRE program is well conceptualized and well implemented.

Contents

Introduction 1
National Trends in YRE 3
North Carolina Trends in YRE 3

Defining What YRE Is—And Is Not 4
But What About Extended-Year Schedules? 5

Alternative YRE Schedules 6

Extracting Useful Evidence About YRE From Educational Studies 7

Which Claims About YRE are Substantiated by Prior Studies? 9
Impact of YRE on Students 9
Perceived Benefits of YRE for Students 9

Impact of YRE on Teachers 11
Impact of YRE on School Administration and Governance 14
Impact of YRE on Students' Families 14
Impact of YRE on Community (Non-School) Variables 17
Impact of YRE on Costs 18

Some Concluding Thoughts 21
Choices About YRE Will Invariably be Political 23
Deciding Whether or Not to Embark on YRE 23

Notes 24

References 25

Appendix A 28
Figure A-1 28
Figure A-2 29
Figure A-3 30

What Twenty Years of Educational Studies Reveal About Year-Round Education

Introduction

Those who give advice on how to avoid fruitless and frustrating arguments with friends frequently suggest that two topics--religion and politics—should be avoided. Year-round education (YRE) might be a third such topic to avoid in casual conversations with friends you wish to keep, for opinions about YRE are often held as passionately as are religious and political persuasions. Even when the dialogue moves from private to public discourse, the opinions are held strongly, as witness the following quotes, selected from hundreds, both pro and con.

> *The primary appeal [of YRE] is obvious. By increasing the service one building provides, a district can decrease the number of new buildings it needs. If a district added the summer months to the school calendar without extending the number of student attendance days, that district could, theoretically, serve 25% more students without laying a single brick.*
>
> *But the appeal is not simply financial. Teachers work nine months of the year to build educational foundations for their students. But every year the summer, like the tide, returns to pound away at those foundations. Surely a school year with shorter, more frequent vacations would provide higher retention and more efficient delivery. (Williams, 1990, unpaged introduction)*

> *. . . some board members and community leaders . . . feel that because some children, parents and teachers have had to "suffer" and "bear the brunt" of a year-round schedule (due to overcrowding), then all children, parents and teachers should be subjected to those same ills, namely:*
>
> *- Classrooms that are not air conditioned in areas where indoor summer temperatures frequently could be in the 100-to-110 degrees range.*
>
> *- No guarantee that all children in a family will be on the same schedule.*
>
> *- Homes where working parents will have to continually make haphazard arrangements for child care through the year . . .*
>
> *- Disruptions of family vacation plans . . .*
>
> *- Teachers who will have to worry whether their own children will be on the same schedule. (Weintraub, 1987, p. 6a)*

These poles-apart sentiments reflect the sharp disagreements among YRE opponents and proponents, but they only touch on a few of the reasons why supporters of YRE champion it and those who oppose it claim it should be banned from their schools.

Perceived advantages of YRE. Some of the most common reasons that YRE proponents give for implementing YRE programs stem from their beliefs that:

- Students learn better under YRE.
- YRE enhances teacher professionalism.
- YRE improves the image of schools as maximizing resources.
- YRE allows families to choose periods for schooling and vacation.
- Under YRE there are fewer "feast or famine" cycles in community programs.
- YRE saves money through better use of existing buildings.

Perceived disadvantages of YRE. Those who work to block YRE proposals from their schools or to jettison such programs if they have been initiated also have their reasons, with the most common flowing from their beliefs that:

- Students learn about the same — or even less — under YRE.
- Teachers are stressed and frustrated by YRE.
- YRE school administrators suffer burn-out because of unremitting pressure of "minding the store."
- YRE seriously interferes with vacations for many families.
- YRE dilutes or destroys many traditional school and community activities (e.g., athletics, summer camps).
- YRE saves no money and may actually cost more.

These divergent views have resulted in two distinct camps of opinion about YRE, both marked by apparent certainty. It seems that most educators are acquainted with YRE, and have gravitated to one camp or the other, leaving few to occupy the neutral position. And perhaps that is understandable, for those who have found themselves occupying the center ground between ardent YRE advocates and adversaries often discover that position is little more comfortable than being caught in the verbal crossfire between pro-choice and right-to-life demonstrators outside an abortion clinic.

Not that one cannot learn from occupying the middle ground, which is the geography from which we pen this paper. Indeed, we have learned much from evaluations of YRE programs we have conducted — often from anonymous letters sent by perturbed school patrons or practitioners, but not infrequently from the evaluation data themselves. We also have benefited from numerous colleagues' efforts to study YRE scientifically, as well as from less formal but not necessarily less informative views other educational practitioners hold as a result of extensive experience with YRE.

Our hope in this paper is to summarize and synthesize briefly what is currently known about the effects of YRE on important educational outcomes, drawing most on formal research and evaluation studies but not ignoring the wisdom that experience and informed judgment can provide. For example, there is less to be learned to date from formal cost-benefit studies of YRE than from the testimony of fiscal officers in school districts that have had extensive experience in operating YRE programs. When the phenomenon of YRE has been thoroughly researched, with results from carefully controlled studies of all of its various facets carefully charted, we will be more willing to restrict ourselves to summarizing only the scientifically unimpeachable studies. Until then, we view insights gained through careful cost analysis and perceptions of those with practical experience as a valuable supplement.

Hopefully, this summary of YRE, as seen from our nonpartisan position between its proponents and opponents, will be helpful to educational policy makers in North Carolina. As a context for this summary, we need to examine briefly both the local and national trends in use of YRE schedules.

National Trends in YRE

Interest in YRE appears to be increasing in many of our nation's states and communities, especially those where increasing student enrollments and need for more school buildings leave school systems financially strapped. YRE is also frequently proposed by educational reformers who believe that modifying the traditional school schedule will improve student achievement. Although opposition to YRE seems to parallel the growth and spread of YRE programs, this flexible form of school scheduling is clearly on the rise. Between the 1980-81 and 1985-86 school years, the number of YRE schools in the U.S. trended slowly upward from 336 to 412, with the number of districts operating YRE schools hovering around 63 (National Education Association, 1987). Four years later, the numbers had increased to 494 in 95 districts (Carriedo and Goren, 1989). During the next three years, however, the numbers rocketed to a total of 2,017 YRE schools in 301 districts and an additional 21 private schools (National Association for Year-Round Education, 1992). According to White (1993), the number of students enrolled in YRE programs increased 83% from 1991 to 1992.

Recently, the *Education Week* described a ". . . spate of possible moves away from year-round schedules," reporting that: (1) over 500 YRE schools in Los Angeles Unified School District will return to traditional school schedules in September; (2) the San Diego School Board is considering whether to reverse its move toward year-round schooling; and (3) in Albuquerque, New Mexico, the school board is considering how to respond to recent referendums which saw parents and staff in 14 YRE schools proposing to return to traditional schedules (Schmidt, 1993 a & b). Closer reading reveals, however, that these events are unlikely to reverse the trend toward more YRE schools, for two reasons.

First, the primary reduction cited is in *single-track* YRE programs that: (1) were adopted for their perceived educational benefits, not to address overcrowding; (2) have struggled because of lack of air conditioning and funds to install it; and (3) are the least economical form of YRE. In Los Angeles, for instance, approximately one-third of the district's students will continue on *multi-track* YRE programs in schools the State of California has air-conditioned because of the belief that such programs can address overcrowding while still containing costs.

Second, according to officials of the National Association for Year-Round Education (NAYRE), for every school district jumping off the YRE bandwagon, several more are jumping on (Archibald, 1992, and NAYRE Executive Director, Charles Ballinger, as quoted in Schmidt, 1993 a). So, the headlines in *Education Week* notwithstanding, it does not appear that the forces that have sparked interest in YRE programs will soon subside.

North Carolina Trends in YRE

Whatever forces are moving schools toward YRE elsewhere in the United States appear to be influencing North Carolina's schools as well. According to John Hood's political column in the April 1, 1993 *Spectator*, the number of YRE programs in the state will double by July of this year, going from 40 programs in 22 districts to 80 in 40 districts. He also reported that, in a recent survey of school administrators in North Carolina's 132 districts, 102 of the 107 responding districts (95%) reported they either already

have YRE schools or are considering the possibility of implementing YRE programs. Even if none of the districts that failed to respond now have or are considering YRE programs, that still means that 77% of North Carolina's school districts either already have YRE schools or are studying their merits.

This apparent interest in YRE has not gone unnoticed; Glines (1992) named North Carolina as one of the nation's top states in YRE, behind only California, Utah, Texas, Florida, Nevada, and Colorado in the number of YRE schools. And the NAYRE president for 1993 reported that he was called on to represent that association at more conferences and workshops in North Carolina than any other state except Florida (Archibald, 1992).

The appeal of YRE to many North Carolina schools has apparently caught the attention of various interest groups in the state who could be hurt financially if YRE becomes widespread. Politicians and educational policy makers are feeling increased pressure from the agricultural and amusement lobbies, as farmers consider alternatives to student labor in the summer, and theme park managers consider the implications of severe drops both in high school students available for summer jobs and in the youngsters who form the bulk of summer's customers. Along with vocal parents who resent changes in the summer life styles of their families, it is likely that North Carolina school boards and administrators who opt for YRE will find themselves under siege from one quarter or another. Of course that should not necessarily be daunting, since those who run our schools are about as accustomed to being under attack as they are to any other aspect of today's educational scene. But the real question is whether or not the benefits to be derived from YRE are worth the opposition that typically will follow any innovation that seriously shakes the foundation of our school's structures or schedules.

That is the question this paper addresses. Before turning directly to what studies of YRE have shown, however, it may be useful for us to: (1) define YRE and sort it out from other schedule modifications with which it is often confused; (2) examine briefly the range of different YRE calendars that are in existence; and (3) discuss just what types of evidence exist in prior studies of YRE and how to extract that which is most useful for deciding whether or not to adopt YRE.

Defining What YRE Is—And Is Not

It is not a simple task to define YRE crisply because, as Merino (1983) noted, "Actually Year-Round schooling is not one specific plan but rather the demise of the traditional September to June school calendar" (p. 298). The term "year-round" is most frequently used to describe programs where the traditional number of school days is rearranged into several instructional blocks interspersed with vacation breaks that are shorter and more frequent than is the case with the traditional calendar. We like either of the following general definitions:

> *YRE is a reorganization of the school calendar into instructional blocks and vacations distributed across the calendar year so that learning is continuous throughout the year. (Quinlan, George, & Emmett, 1987, p. 1)*

> *Year-Round Education takes many forms. In its broadest definition, it is redesign of the school year to make instruction more continual and the traditional summer periods substantially less. (Ballinger, 1988, p. 60)*

Within such general definitions, there are two major types of YRE plans, "unified attendance" plans and "staggered attendance" plans.

Unified attendance plans include YRE programs where all students in a school attend school on the same days, but on a non-traditional schedule. A single-track YRE plan such as the 45-15 plan (all students in a school alternate their attendance, with periods of 45 school days in attendance interspersed with 15 school days off) is an example of a unified attendance plan.

Staggered attendance plans refer to plans that permit children to be enrolled in school on a staggered basis, with not all students in their school/class at any given time, thus allowing more students to be accommodated by a teacher or a school building. A four-track 45-15 plan (four tracks, each attending on the 45 days on, 15 days off, schedule, but staggered so only three tracks are in school at any one time) is a good example of a staggered attendance plan.

Whereas the two previous definitions would fit both unified and staggered attendance plans, many definitions are more restrictive. For example, consider the National Education Association's (1987) definition of YRE:

> *The Year-Round School is a system in which only a portion of students are in attendance in regular terms during each session of the year. Their entry into a new term is staggered throughout the year. (p. 5)*

This definition clearly fits only YRE staggered attendance plans, excluding YRE unified attendance plans such as the single-track 45-15 program described above. Yet, according to the NAYRE (1992), approximately half of the nation's YRE schools are single track and half multiple track. Careless definition creates considerable confusion when it ends up labeling YRE in a way that excludes half of the nation's YRE programs. For purposes of this paper, we define YRE broadly, following either Ballinger's or Quinlan, George, and Emmett's definitions quoted above, so as to include both unified and staggered attendance programs.

But What About Extended-Year Schedules?

Many people also use "Year-round" to refer to extended school years where the annual days in school have been increased from 180 to 200 or 220. Having the students spend *more of the year* in school in these programs apparently has led to their being labeled by many as YRE programs. Such a conceptually different approach to scheduling school days deserves a different label. We choose to call such plans, non-YRE "extended-attendance" plans, to distinguish them from the unified or staggered attendance plans that are used in YRE programs. The difference between the extended-attendance plan and the two YRE attendance plans is straightforward. *Extended-attendance plans* aim at increasing the educational offering to students by lengthening the *amount* of time they attend (i.e., actually spend *in* school). Such attendance plans are concerned with whether 180 days of traditional length are enough for today's society and, if not, how to get more. (Conversely, YRE programs are concerned with how to divide up the traditional number of school days and vacation days.)[1] Examples of an extended-attendance plan would be a 200-day program, with 10 days added to both the beginning and end of the traditional school year.

Although this paper does not presume to cover extended-attendance plans in any meaningful way, they are relevant enough to warrant a few observations.

First, many arguments have been made for lengthening the overall amount of time students spend in school. Indeed, some would label as quaint the American belief that our teachers can somehow achieve in 180 days what it takes

others 220-240 days to accomplish. This belief seems naive when one examines the alarming slippage in the ranking of our nation's citizens and students, when compared with other nations on most scales of literacy or numeracy. Economists, industrial leaders and politicians are among those who see an urgent need to increase the intensity of schooling to prepare a work force that can recapture American pre-eminence in world markets. Many leaders and policy makers are suggesting that our 180 day school year be extended to 220 or 240 days as in Japan or parts of Europe. And the media frequently calls for longer days and years, as evidenced by the view of *Newsweek* that "... real reformers want more than a timid rearrangement of the 180-day calendar" (Baker, et al., 1987).

Second, although logic (and also the limited research) suggests that extended-year plans would lead to increases in student learning, there is not yet much solid evidence on this point.

Third, some opponents of extended-year schedules (e.g., Mazzarella, 1984) argue that such added time is unnecessary, for "the real key is making better use of the time available" (i.e., increasing "time-on-task").

Finally, despite logical arguments in favor of extended-year schedules, enthusiasm generated for the concept typically runs aground on financial rocks and reefs. Given our current economic condition, it seems unlikely that many taxpayers will support a significant increase in the compulsory school year because of associated cost increases. Several commentators (e.g., Rossmiller, in a 1983 telephone conversation reported by Mazzarella, 1984) said expansion of the school year on any broad scale is politically impossible because the public won't stand for it, especially in tough financial times.

In YRE programs, there may be potential for significant cost savings, depending both on the YRE schedule chosen and how it is implemented. The absence of such potential for extended-year plans makes it unlikely that they will concern policy makers as much in the near future as will YRE plans.

Alternative YRE Schedules

As we mentioned previously, YRE is *not* a unitary concept. There can be nearly as many different types of programs as there are YRE schools. To illustrate, here are some examples of different types of YRE calendars.

- Block 45-15 (single track)
- Staggered 45-15 (multi-track)
- Flexible 45-15 (individualized)
- Block 60-20 OR 60-15
- Staggered 60-20 OR 60-15
- Flexible 60-20 OR 60-15
- Block 90-30
- Staggered 90-30
- Flexible 90-30
- Concept 6 plan
- Concept 8 plan
- Concept 16 plan
- Quarter plan
- Trimester plan
- Quinmester plan
- Five-track, five-term plan
- Flexible all-year plan
- Full summer term, with traditional 9-months
- Personalized continuous year

These YRE calendars are not all equally popular, as can be seen in Table 1, which is drawn from recent NAYRE (1992) data:

Table 1
Most Common YRE Calendars

Calendar Type	Number of Schools
45-15	403
60-15	128
60-20	565
90-30	639
Concept 6	132
Other	181

It is beyond the scope of this paper to describe each of the alternative YRE calendars (descriptions can be found in Ballinger, Kirschenbaum, and Poimbeauf, 1987), but Appendix A contains graphic portrayals of the traditional 180-day calendar and two different 45-15 plans may be useful to those previously unacquainted with how YRE calendars work.

Extracting Useful Evidence About YRE From Educational Studies

School administrators, when confronted with polarized views of YRE—proffered by people who cannot be dismissed as being at either extreme of society's "lunatic fringe"—may wonder what gives rise to such opposite views. We think there are two reasons. First, YRE programs take so many forms that the same persons could easily oppose one YRE program and support another, using the same criterion, without being inconsistent. Second, so far, research on YRE is both limited and fragmentary, thus making it difficult to give unequivocal research-based answers to several of the important questions about YRE.

The remedy for the first point is simple: quit speaking about YRE in generic terms and restrict all accolades, analyses, and criticisms to the specific type(s) of calendar under study. That is not easy to do, however, because (1) many studies are not specific about the YRE plan(s) studied; and (2) there are too few studies for each specific calendar to make any calendar-specific generalizations possible. On this point, we ignore our own advice, for we mingle YRE programs of unknown types in trying to examine overall "YRE vs. traditional schedule" comparisons. Even though we hear the scientific ice creaking a bit under our feet, we believe any modest errors we are likely to make are preferable to suggesting that administrators wait until there is enough indisputable data on the relative effectiveness of each type of YRE calendar to guide administrative decisions with certitude, for that would be a very long wait indeed.

The second, closely related problem (that of the overall foundation supplied by educational studies being limited and a bit shaky) lacks any easy remedy. To illustrate, let us examine for a moment three different sets of circumstances practitioners may encounter whenever they turn to prior research and evaluation as a guide in making decisions about some educational innovation. These three different situations are portrayed in Table 2.

In Situation 1, there is one *definitive*, comprehensive, landmark study that validly examines all the important aspects of the innovation being considered. That one study gives a fairly good, overall picture of how well the innovation would work.

In Situation 2, there is a series of valid studies, planned as programmatically related steps in a large research program so that the results of the studies fit logically together into a complete or definitive portrayal of the innova-

Table 2
Alternative Situations When Practitioners Draw Upon Prior Studies

Situation	Research Findings:	Deciding What Implications the Research Has for Practice
1	result from a definitive landmark study	Read the results of the study.
2	result from a series of programmatic related studies	Read results of: the studies, or the final study if it summarizes all the studies' collective results
3	result from non-programmatic, unrelated or loosely related	Summarizes the results of the studies through: meta-analysis vote counting narrative summarization

tion the practitioner is considering. The studies are pieces of a puzzle that fit together easily to make a complete picture.

In Situation 3, there is only a collection of unrelated or loosely related studies of various facets of the innovation, which the practitioner has to make sense of in some fashion. These are like the random puzzle pieces that you find in the bottom of your game closet after your three-year old has spent a joyful afternoon among your favorite puzzles. It is a Trojan task to sort and arrange those pieces into any identifiable pictures, especially with the probability that some pieces are missing or in the wrong boxes.

Situation 3, unfortunately, is more descriptive of the prior studies of YRE than either of the preceding situations. No single definitive study has been attempted—or likely would be feasible—in such a complex area as YRE. And the studies conducted so far are not the carefully related series where each would provide results the next could build on until the entire set, collectively, answered the key questions. Unfortunately, they are more like pieces from the game closet floor.

When dealing with studies that resemble random puzzle pieces, there are three common techniques for summarizing them to see if they can be made into a coherent picture. They are: (1) meta-analysis, (2) vote counting, and (3) narrative summarization. Without side stepping into technical terminology, it is only possible to say that *meta-analysis* requires (1) access to careful reports of study procedures as well as findings, and (2) studies that provide numerical comparisons on key outcome variables between two or more competing alternatives (including average scores and dispersion of scores around that average for students in each alternative). In the YRE literature, only a few studies provide numerical comparisons, and access to adequate reports of the research procedures are so rare that a University of Houston doctoral student had to abandon as her dissertation topic a meta-analysis of the YRE research literature.

Vote counting is less stringent, requiring only that one tabulate, for each type of outcome addressed in prior studies, how many studies investigated and found positive results (results favoring the innovation), negative results, or no differences. Such vote counting can be done with many prior YRE studies, for several key

outcomes. Page limits for this paper do not allow the complete summarizing and tabulation of all YRE studies on which this paper depends. Such a study-by-study listing does exist in a separate paper, however (Sailor and Worthen, 1993).[2] The balance of this paper draws on that work, but attempts to simplify the results of prior studies by use of both narrative description and simple graphic summaries of what previous research and evaluation studies say about the merit of YRE programs.

Which Claims About YRE are Substantiated by Prior Studies?

In this concluding section, we summarize what prior studies reveal about YRE by examining, in turn, its impact on students, teachers, school administration and governance (including both building administrators and boards), families, communities, and costs of educating the student. In each of these areas, we will first outline the major claims that have been made by YRE supporters as well as counterclaims leveled by opponents of YRE. Then we will share what we believe is *known* with reasonable certainty, based on prior formal research, evaluation, and cost analyses. While we have attempted to be thorough, using computer databases (ERIC-Dialog, Education and Social Sciences Indices, and Dissertation Abstracts) print summaries published by Phi Delta Kappa and the NEA, and branching bibliographic methods, we make no claim to our review being exhaustive or to our having uncovered all of the fugitive documents that report studies of YRE. But we have digested 47 pounds of research literature . . .

Impact of YRE on Students

Proponents of YRE have, collectively, claimed that YRE benefits students in all the following ways:

Perceived Benefits of YRE for Students

- Improves retention of learning because of shorter vacations.
- Reduces time needed for post-vacation review(s).
- Allows timely opportunities for inter-session tutoring, remediation, and special interest courses.
- Reduces students' boredom and increases enthusiasm for school.
- Lessens students' boredom with long vacations.
- Decreases student dropout rates due to more frequent opportunities for remediation and more re-entry points.
- Increases student attendance.
- Maximizes students' flexibility in scheduling vacations when employment opportunities are best; evens out job competition.
- Allows students to schedule vacations during favorite sessions (e.g., ski season).
- Increases engaged learning time because procrastination is risky in shorter school terms.
- Avoids breaking off friendships when overcrowding would otherwise result in changes in school boundaries.
- Reduces class size in many classes that move to YRE.
- Alleviates those long winter "blahs."
- Allows students to make up missed work in smaller chunks, during inter-sessions, rather than having to make up a whole year.

Opponents of YRE are not nearly so optimistic, citing several disadvantages they believe are inherent in YRE programs.

- Disrupts friendships because friends are often scheduled for off-track vacations at different times.
- Requires off-track students to come back for extracurricular activity, or miss out.
- Causes conflicts with summertime activities (e.g., summer camp, summer agricultural jobs).
- Disrupts family vacations, when some family members are on one schedule and others are on another.
- Increases difficulty for students who are not "time efficient" and need longer sessions to gain "learning momentum."
- Frequent breaks in school lessen learning and interfere with integration of content in important academic areas.
- Schedules rarely are flexible enough to allow students genuine choices.
- Frequent breaks often pose child care problems and result in inadequate supervision of "off-track" children.

When one tries to get beyond such rhetoric to examine what facts are *known* about the impact of YRE on students, we should remember the caution that impact obviously differs with the form of YRE used. Yet, in general, the following portrayal of the impact of YRE on students can be drawn from what prior educational studies have taught us.

Student attitudes. When asked, students for the most part like YRE. (Strangely, their opinion has not been sought in many studies.) In every study we have examined or conducted, a majority of students favor YRE. This finding has been reported by Brekke (1984), Quinlan, George, and Emmett (1987), Ballinger (1987), Shuster, et al (1990), Shuster and Rodgers (1992), and the Utah State Office of Education (1989). When controversies about YRE erupt in the community, it is instructive to note that parents are often polarized, but if YRE has been launched, a great majority of their children who write letters to newspaper editors favors its continuation.

Student attendance. Positive student attitudes toward YRE generally seem to translate into better attendance and less absenteeism (as reported by Quinlan, George & Emmett, 1987; Brekke, 1984; Ballinger, 1987; White, 1987; Ballinger, Kirschembaum & Poimbeauf, 1987; Nebo School District, 1986). Until recently, only Housden and Holmes (1981) reported higher absentee rates for their "remedial" track. Some districts who are currently running summer YRE sessions in buildings lacking air conditioning (e.g., San Diego) have recently reported high absenteeism and a resulting loss of state financial aid (Schmidt, 1993a). This seems only to be a problem where hot summers make school untenable without air conditioning; in such conditions, however, summer absenteeism could be a serious drawback. Grotjohn and Banks (1993) reported that summer absenteeism was more than made up by higher student attendance in YRE at other seasons, however, with their review of YRE students having a ratio of five studies that show YRE increased attendance, to one study that found attendance under YRE lower.

Student dropouts. Although dropout rate is not a widely researched variable in YRE studies, White (1987) reported reductions in dropout rates after implementing YRE.

Student achievement. Looking across 32 studies conducted between 1977 and 1992, plus two reviews that summarize another dozen for the same period, the results are mixed. The preponderance of evidence suggests that YRE students' performance on measures of academic learning (e.g., reading, math) is about the same in most studies as their performance while on traditional schedules, while some YRE programs were found to yield significantly higher student

Table 3
What Prior Studies Show About the Impact of YRE on Students

	Clustering of Evidence Seems to Center on:		
	Positive + (Favors YRE)	Neutral o or No Difference	Negative - (Favors Traditional)
1. Attitudes	+		
2. Attendance	+		
3. Dropout Rate	+		
4. Achievement	+	O	

achievement scores. These trends were confirmed in a recent and rigorous review of 27 studies on the impact of YRE on achievement; Grotjohn and Banks (1993) reported that 12 studies found YRE increases achievement, 11 showed neutral or mixed results, and only 4 found negative effects of YRE. Overall, there appears to be a slight but not overwhelming advantage for YRE students in learning basic content. What is clear is that well-implemented YRE programs do not result in any lessening of learning. This is heralded by YRE supporters as a real plus, when considered in light of their argument that YRE costs less; in a later section we will examine whether that claim holds up.

A summary of YRE's impact on students. It is our belief that it is still too early to be certain about the ultimate impact YRE programs will have on students, or for that fact, other important educational variables. More and better research and evaluation studies will be needed before the picture becomes clear enough to describe it with absolute certainty. The trends that are beginning to emerge from prior YRE studies are provocative, however, and it would seem irresponsible to wait for "ultimate truths" about YRE to emerge, while not discussing early trends that seem likely to be previews of what further studies will show. Therefore, we presume to summarize the admittedly incomplete picture as best we can, knowing that school administrators and policy boards do not have the luxury of delaying decisions about YRE until the researchers have delved completely into the various effects of YRE.

Table 3 is an effort to portray graphically what we believe can be said with reasonable confidence about the impact of YRE on students.

Impact of YRE on Teachers

Proponents of YRE have advanced many claims about how YRE benefits teachers, including the assertions that YRE:

- Enhances teachers' attitudes about their work.
- Enables teachers to reduce or eliminate post-summer review.
- Reduces teachers' needs to monitor make-up work, due to increased student attendance.

- Provides more frequent "relief" from misbehaving students, and possibly reduces behavior problems.
- Enhances teacher professionalism by reducing need for "moonlighting" because of opportunities for extended contracts and higher pay.
- Increases self-esteem as year-round professional.
- Reduces burn-out because of more frequent vacations.
- Reduces teacher absences.
- Allows teachers flexibility in when they take vacation.
- (In schools designed for YRE) provides for teacher offices and library space.

Critics of YRE have countered with a list of disadvantages they believe teachers suffer under YRE.

- Interferes with teachers' pursuing advanced degrees in summer.
- Interferes with summer opportunities for in-service training.
- Frequency of "beginning" and "ending" sessions requires considerable organizational skills.
- Across multiple years, leads to burnout without extended periods away from students for "personal renewal."
- Changing classrooms during school year can be disconcerting; no "home base."
- Serving present "on-track" students while readying plans for students soon to return from off-track can be daunting.
- For extended-contract teachers who do not go off track with the students, burnout can be a serious problem.

Which of these positive or negative claims are supported by hard evidence? Only a few. In fact, many of these claims have not been examined by any of the prior studies. Those studies do, however, give some indication of the impact YRE has on teachers in the four areas summarized below.

Teacher attitudes. Of the studies where teacher or educator attitudes have been explicitly examined, the majority favor YRE. Shuster and Rodgers' (1992) survey of 197 teachers in YRE schools in one district showed teachers' attitudes toward YRE were favorable on almost every question asked. In a statewide survey of YRE in Utah, 84% of the teachers indicated they "would prefer YRE, given a choice" (Utah State Office of Education, 1989). Positive teacher attitudes toward YRE were also reported by Quinlan, George, and Emmett (1987), Nebo School District (1986), and Pelavin (1979), although the latter reported that the positive findings were held primarily by YRE teachers, while teachers on traditional scheduled tended to favor those schedules. And in a review of prior studies, Merino (1983) reported that 8 of the 13 that examined educators' attitudes showed them to favor YRE, while educators in 4 studies were negative toward YRE, and attitudes were mixed in the remaining study. Young and Berger (1983) reported that teachers' attitudes toward YRE were negative.

Teacher absenteeism. None of the studies that examined teacher attendance found greater absenteeism under YRE schedules. On the contrary, Brekke (1984) reported teachers were absent 16% less under YRE schedules, and school administrators who responded to a survey by Quinlan, George and Emmett (1987) said YRE decreased teacher absences markedly. White (1987) also reported less teacher absences under YRE. In Grotjohn and Banks' (1993) review, they cited four studies that found teachers were absent less under YRE and three that found no

differences in teacher absences under YRE and traditional schedules. Overall, YRE is clearly favored on this dimension.

Availability of high-quality teacher substitutes. Brekke (1984) reported that qualified substitute teachers were much easier to find under YRE calendars, because teachers who were "off track" were often willing to step in as substitutes, particularly within their same schools, where their familiarity with the school and possibly with the children made this an advantageous arrangement. This advantage was also reported by Ballinger (1987). Although few studies have investigated this issue directly, this advantage is widely advanced by YRE advocates and seldom disputed by adversaries of YRE, so we believe this factor should be listed in the "plus" column for YRE.

Teacher professionalism and burnout. Several prior studies have attempted to ascertain just how YRE schedules impact on teacher burnout and on teachers' perceptions of their professionalism, including issues surrounding opportunities to earn additional money on extended contracts rather than needing to pursue other summer jobs. The results are tangled, however, by the inability to tell from several studies whether the sentiments reported for teachers were for YRE teachers only, for teachers on traditional calendars, or for both. In general, however, it appears that YRE teachers, overall, are neutral to positive about the opportunity to be a "year-round teacher" and the opportunity to earn higher salaries. Also, it appears YRE teachers experience slightly less burnout, because of the more frequent breaks, but report slightly more stress. Space does not permit us to cite here the various studies that support these observations, but the reader is referred to Sailor and Worthen (1993) if more details are desired.

Summary of YRE impact on teachers. Table 4 portrays graphically the general trends found in prior studies of how YRE affects classroom teachers. As can be seen, impact of YRE is generally positive, when information about teachers is averaged within studies and summarized across studies.

Table 4
What Prior Studies Show About the Impact of YRE on Teachers

	Clustering of Evidence Seems to Center on:		
	Positive + **(Favors YRE)**	**Neutral o** **or No Difference**	**Negative -** **(Favors Traditional)**
1. Attitudes	+		
2. Attendance	+		
3. Availability of quality subs	+		
4. Professionalism and burnout	+	O	

Impact of YRE on School Administration and Governance

YRE supporters believe that YRE provides the following advantages for school administrators and policy makers:

- Allows enrollment bulges to be handled flexibly as they move through K-12.
- Facilitates detection of dropouts and remediation needs because of tracking needed in YRE.
- Provides natural opportunities to explore other "restructuring" options.
- Inter-sessions are golden opportunities to experiment with accelerated and remedial programs.
- Parents favoring innovation will applaud innovativeness of YRE, especially if inter-sessions are funded.

Opponents of YRE schedules claim that administrators and local boards will find it has several "administrative" disadvantages, including the following:

- Fits elementary school better than secondary because of scheduling issues.
- Creates distrust of school board and administration if parents misunderstand YRE.
- A school may forgo other reforms because being in YRE "puts them on the cutting edge."
- Shortened time blocks can disrupt course continuity.
- Increases administrator's "burnout" because of lack of time off to plan.
- Increases morale problems if teachers do not support YRE.
- Increases space difficulties for remedial or other special programs normally run in the summer.

Summarizing the impact of YRE of school administration and governance. Unfortunately, the prior educational studies shed little light on any of these claims. There are only disjointed bits of anecdotal data available in most of these studies, and the findings are far too fragmented and preliminary to support even tentative generalizations. In this area, it appears that practical experience and common sense will have to guide decision making until future studies provide better information.

Impact of YRE on Students' Families

This is probably the most hotly contested issue associated with YRE. Even in the midst of raging debates about the impact of YRE on student achievement, it often becomes apparent that for many, "achievement" is really a surrogate for much more personal concerns having to do with lifestyles, traditions, or economic considerations. When the impact of YRE on the family is debated openly, proponents of YRE list for it benefits such as the following:

- Increases family's freedom to choose when to schedule vacation.
- Working parents can more readily arrange and afford child care for shorter inter-session breaks.
- Staggered schedules of older siblings can help parents with care of younger children.
- Spreads costs associated with schooling (e.g., clothing, extracurricular fees, materials) across entire year.

Opponents of YRE list disadvantages such as those below:

- Makes family vacations hard to schedule when children are on different schedules.

- Breaks down family cohesiveness when children are on different schedules.
- Makes it difficult to provide supervision and structure for the off-track child.
- Makes it difficult to arrange transportation for the off-track child.
- Disrupts family businesses that depend on the student's availability during the summer (e.g., farming).
- Breaks up friendships when friends are placed on different tracks.

In considering these claims made for and against YRE, there is more data than in some of the other areas. However, parent attitudes are the primary data source on which prior studies of YRE have depended in trying to determine how YRE impacts on students' families. Parent attitudes are notoriously changeable, however, not only because of population turnover in many schools' attendance areas, but also because a critical incident, the media, a campaign by an organized group of patrons, or some unrelated problem with the schools can alter parents' perceptions in unpredictable ways. The personality of the school superintendent or the success of the basketball team may have nearly as much to do with reactions of patrons in a particular study as does YRE. Yet, by looking across multiple studies, some clear trends do begin to emerge.

Perhaps the most important is that a majority of parents favor YRE in a majority of the studies that report parent attitudes. In an earlier review of YRE studies, Merino (1983) identified six that had investigated parents' attitudes toward YRE. Two reported that the majority of parents were positive about YRE, one reported that the majority of parents were negative, and the other three reported mixed positive and negative results. However, when the "mixed" results are scrutinized, two of the three studies reported that a majority of parents *with children on YRE schedules* (who would, presumably, be in the best position to make informed judgments) prefer YRE.

It may be of interest to note that the only study Merino located that found a majority of parents to be negative toward YRE is a Duke University dissertation based on a survey of North Carolina public school parents toward extended-year programs. In it, Carpenter (1977) reported that the majority of the parents were negative, with farmers being the most negative and blacks the most positive. Although included by Merino (1983), we exclude this study because the attitudes were directed toward extended-year programs (*adding* time to the school schedule) rather than toward YRE (rearranging the schedule for the *existing* amount of time).

We have been able to locate six additional studies of parent attitudes toward YRE that were not included in Merino's decade-old review. Five reported that the majority of parents favor YRE. For example, in a study of a year-round junior high in Washington, Young and Berger (1983) reported that 67% of the parents of the junior high students in YRE indicated that they wanted the program to continue. *USA Today Magazine* (1982) reported that parents of YRE school students in Los Angeles gave high marks to YRE, with significant majorities believing that it resulted in their children having more positive attitudes toward school, better behavior, improved attendance, and higher achievement. In an even more comprehensive study of all YRE schools in California, Quinlan, George, and Emmett (1987) found that between 50% and 70% of the parents (depending on the question) favored YRE over the traditional schedule. Because the majority of students enrolled in YRE are in California schools, this survey appears to be the broadest conducted so far.

Two of three Utah studies also showed parent support for YRE to be strong. In a telephone survey of 520 parents of students in 13 YRE schools in four Utah districts (Utah State Office of Education, 1989), between 78% and 85% of the parents responded positively to items such as, "The benefits of YRE outweigh the disadvantages" and "YRE is equal to or better than the traditional schedule on all aspects."

The other two Utah surveys were conducted in the Cache County School District, where the move to YRE was vigorously opposed by many parents. In the first survey, conducted one year after YRE was implemented, Shuster, et al. (1990) found that, on most items a majority of parents favored YRE, a minority were negative about YRE, and the remainder believed YRE yielded about the same results as the traditional program. For example, 58% of the parents agreed with the statement, "Our family is happy with the YRE program," 23% disagreed, and 19% were neutral. In judging the "overall quality of the school on the YRE schedule compared to the traditional schedule," 19% said the quality was better, 13% said it was worse, while 68% said it was the same or could not discriminate between the two. To have such a large percentage of the parents say the quality of the school is the same or better after instituting a major, initially unpopular change seems quite favorable for YRE.

Two years later, a survey of a sample of parents from the same population (Shuster and Rodgers, 1992) found that attitudes of parents toward YRE had tilted slightly to the negative side. When asked if the YRE program should continue, 35% responded "Yes," 40% answered "No," with the balance expressing no opinion. This two-year decline in parent attitudes appears to be, in part, a result of a persistent anti-YRE campaign by a vocal minority of the parents, although it may also be related to funding of inter-sessions and difficulties in providing desired tracks for the majority of students. This observation led to our re-examining the other studies cited in this section, and one pervasive

Table 5
What Prior Studies Show About the Impact of YRE on Families*

	Clustering of Evidence Seems to Center on:		
	Positive + **(Favors YRE)**	**Neutral o** **or No Difference**	**Negative -** **(Favors Traditional)**
1. Attitudes when YRE programs are well implemented	+ (Strong Majority)		- (Dedicated minority)
2. Attitudes when YRE programs are poorly implemented	+ (Half or	O slightly fewer)	- (Half or slightly more)

*Two entries for each row in this table is an attempt to portray the pronounced bi-model "split" of parents on the dimensions.

finding has emerged. Put simply, summarizing across studies, there always seems to be a strong minority of parents (typically 15 to 25%) who oppose YRE first, last and always, even when it is well implemented. If a YRE program is poorly implemented, the negative sentiment swells until half or more of the patrons are opposed to YRE. Administrators who make no effort to alter the perceptions of those who are negative (dismissing them because they are "clearly a minority") risk being trampled underfoot by this minority and others they have recruited to form a majority who will oppose YRE.

Summarizing the impact of YRE on families. Table 5 shows graphically what we believe to be two sound generalizations from prior YRE studies. First, well-implemented YRE programs will typically enjoy initial support from a comfortable majority of their patrons, and this support can be maintained over time if good public relation efforts offset the anti-YRE campaigns of the minority who are most vehemently opposed. Second, when YRE programs are poorly implemented, parents are again split between positive and negative attitudes, with more than half typically being opposed.

Impact of YRE on Community (Non-School) Variables

Advocates of YRE argue that YRE programs not only have a positive impact within the schools, but also provide several broader benefits to the community at large, including the following:

- "Levels out" year-round availability of students for employment.
- Spreads use of community facilities (e.g., YMCA) across year, avoiding potential floods and droughts.
- Allows funds, saved by not building new schools, to support other community needs.
- Decreases delinquency and vandalism in the community.
- Eases competition for space for new construction in crowded communities.

Adversaries of YRE see, instead, areas where YRE can be disadvantageous to the community, such as those listed below:

- Competes with community summer programs and businesses.
- Is destructive to businesses that are dependent on school-age customers or that depend on children for summer help.
- Interferes with traditional extended family or community-wide events (e.g., reunions, cultural or historical celebrations)

Prior studies are mute concerning all but one of these claims and counterclaims. There is some information in prior research about the effect of YRE on vandalism of school property. Citing earlier studies by Brown (1975) and Richmond (1977), Merino (1983) stated tentatively that YRE " . . . may reduce the incidence of juvenile crime to the degree that fewer numbers of students are not [sic] enrolled in school at any one time" (p. 312). Richmond's study bases its claims that YRE reduces vandalism of schools as much on logic as on data, however, and it mingles extended-year programs and YRE. And Brown's findings were based on perceptions of municipal authorities that juvenile delinquency had decreased. Given these rather soft studies, the tentativeness in Merino's conclusion about decreased delinquency seems necessary. Both Brekke (1984) and Ballinger (1987), however, report consistent patterns of reduced vandalism and burglary loss at YRE schools, based on their data collected, respectively, in California's Oxnard School District, and in several California school districts.

Table 6
What Prior Studies Show About the Impact of YRE on Communities

	Clustering of Evidence Seems to Center on:		
	Positive + **(Favors YRE)**	**Neutral o** **or No Difference**	**Negative -** **(Favors Traditional)**
Reduction in vandalism of school property and burglary loss	+		

Summarizing the impact of YRE on the community. Prior studies shed light on only one of the claims concerning YRE's impact on the community. As shown in Table 6, YRE appears to significantly reduce the incidence of crimes against school property, including both vandalism and burglary loss. YRE may also help reduce juvenile delinquency, more generally, but that conclusion is too tentative to propose as a generalization at this time.

Impact of YRE on Costs

With the exception of single-track YRE schedules (that most often have been adopted because of belief that they will improve student learning), the main argument advanced for YRE is that it will alleviate overcrowding in the schools by eliminating costs for new buildings, thus maximizing on prior capital investments and saving significant costs that would otherwise be incurred in educating (the same number of) students. Howe (1973), a school board member in Portland, Oregon, put it this way:

> *To oversimplify the basic economic attraction of the year-round concept: When four classrooms are required under the traditional nine-month school year, three year-round classrooms can do the job. In school districts where student populations are growing, this three-for-four formula can help impose a moratorium of several years on school construction, and, ultimately, under a year-round plan the amount of real estate and the number of school buildings required at any given time would approximate only three-fourths of those required under the traditional school year. (p. 46)*

Perceived benefits of YRE on costs are:

- Saves large amounts by maximizing use of existing schools and avoiding expenditures for new buildings.
- Saves not only on canceled construction costs but also on accompanying debt service.
- Maximizes use of fixed costs (e.g., insurance, capital outlay) that are expended whether or not schools are vacant.
- Saves on per-pupil operating costs because of sharing of books, furniture, etc.
- Saves large amounts of personnel funds that would have been necessary to staff new buildings (were students not accommodated in YRE schools).

- Would allow districts to retire outdated buildings, sell the property, and gain income from taxes on buildings placed on those properties that have been returned to the tax rolls.
- Saves maintenance costs because fewer buildings are needed.
- Savings from extended teacher contracts are realized through a reduction in health and insurance costs, which outstrip cost-of-living adjustments.

Critics of YRE are dubious about YRE saving on any costs, arguing instead that YRE

- Saves little or nothing because increased personnel costs (extended contracts) absorb savings in construction.
- Increases operating costs, especially when utility costs for air conditioning are included.
- In hot climates, requires expensive air conditioning for many buildings.
- Increases maintenance costs and allows minimal down time for large repairs and deep cleaning.
- Requires extra funds for start up, extra planning, many meetings with public and teachers, development of computerized tracking system.
- Requires more money for scheduling and student counseling.
- Requires more money, time, and staff to develop remedial mini courses.

Resolving these opposing claims is not as simple and straightforward as it may seem at first blush. Determining that a YRE schedule has alleviated overcrowding or eliminated double sessions is not too challenging, but determining whether the overall cost of education has changed is much more complex and difficult. This is largely because direct comparisons between costs of YRE and traditional schedules are difficult to obtain. Baker, et al. (1978) noted that the three primary approaches to making such comparisons are:

1. Comparing the YRE program budget with the budgets for *prior years* when the traditional schedule was in use;
2. Comparing the YRE program budget with that of a *matched school* on a traditional schedule; and
3. Comparing the YRE program budget with a *simulated budget* for the same school(s) and time period, under a traditional schedule.

Although some may view simulated costs less convincing than actual costs, these researchers conclude that the third option is to be preferred to the other approaches for determining the true relative costs of YRE and traditional schedules. The logic of this is patently clear when one examines probable problems with the other two options.

For example, comparing YRE budgets with prior year's budgets for traditional schedules is likely to be invalid because of history—intervening events other than the introduction of YRE that have altered costs, thus confounding and obscuring the real costs of YRE-traditional schedule comparisons. While obvious cost changes may be picked up (negotiated increases in teachers' salaries, or cost-of-living adjustments), some more subtle cost changes (e.g., slight increases in costs of supplies that accrue to noticeable differences in the budget totals for the year) may well be missed. Costs can decrease with time, but that is such a rarity that this form of comparison is likely to disadvantage the newer YRE calendar by judging it more expensive than older traditional schedules, when in fact some or all of the real cost increase may be due to factors totally unrelated to YRE.

The second option, that of comparing YRE budgets with budgets of carefully matched schools is only valid to the extent to which the schools are actually matched on all relevant cost items. It is usually difficult, if not impossible, to match schools on any one dimension (e.g., seniority of teachers, so costs of staff salaries will be equal). That task becomes even tougher as one tries to match on additional dimensions such as maintenance (which may vary because of different ages or construction styles of buildings), transportation costs (bus routes of one school may be significantly longer), insurance (one school may be in a flood plain, or in a high crime area), or costs for paraprofessionals (one school may have more parent volunteers to serve as teaching adjuncts, where another may be required to spend more to hire paraprofessionals to assist teachers). The difficulty lies less in differences on variables one can identify (and therefore take into account) than in real differences that go undetected but may still operate, making the comparisons invalid in unknown ways.

Fortunately, the majority of prior studies of YRE costs have used the preferred comparison of actual YRE budget to a simulated traditional schedule budget.

Impact of single-track YRE on costs. Those who have advocated single-track YRE programs have done so primarily because of their belief that students will learn better under YRE than with the traditional schedule. Seldom has anyone suggested single-track YRE programs would cost less, and sometimes proponents have acknowledged they will cost more because of factors such as additional maintenance, adding air conditioning in hot climates, and adjusting salaries of administrators, cafeteria workers, etc. for year-round duty. The findings of prior studies are generally in line with expectations. Ballinger (1987) and Quinlan, George, and Emmett (1987) noted that operating costs for single-track YRE programs are about the same as operating costs for schools on the traditional schedule. A study in Florida (Orange County, 1991) concluded that operating costs for single-track YRE programs are significantly more than those for the traditional schedule. And in Los Angeles, the recent decision to discontinue hundreds of single-track YRE programs was based in part on their estimates that returning to the traditional schedule would save an average of more than $7,500 per school in operating costs, primarily maintenance (Schmidt, 1993 a & b). In short, single-track YRE programs must be justified because they yield significant increases in student achievement or some other valued outcome judged to be worth their increased costs.

Impact of multi-track YRE on costs. Here the picture is very different. Virtually all of the prior studies that have examined the relative costs of multi-track YRE programs and traditional schedules have concluded that, overall, multi-track YRE[3] programs result in substantial cost savings.[4] Brekke (1984) reported significant cost savings for the categories of operating costs, capital outlay, and personnel. Savings in the latter two studies resulted from savings of costs for constructing and staffing the school(s) that would have been necessary were it not for the efficiency of the YRE schedule. Similar findings were reported by Ballinger (1987) and Quinlan, George, and Emmett (1987). White (1990) reported that one Colorado district had experienced a savings of approximately $3.56 million per year in operating costs for 20 YRE schools, but that failure to highlight this savings had resulted in a decision to terminate YRE, at substantial cost. In a later report, White (1993) reported that the cost savings in not having to hire and pay both salary and benefits to each additional (unbuilt) school were dramatic. In a neighboring district, a certified public accounting firm's audit report of costs associated with that district's YRE program (Price-Waterhouse, 1991), also reported significant YRE cost savings, not only in operating funds, but also pro-

jected savings from not having to build and staff additional schools. Florida's Orange County (1991) reported savings of over $7 million in construction costs avoided for each new school not built, and savings of approximately $88,000 additional per year that would have been required to staff that school. This report also showed how operating costs were in large part controlled by discretionary policy and administrative decisions made by the board and district administration; the authors argued that comparisons of relative operating costs were less important than those for capital outlay and basic personnel costs.

In one of the most extensive studies of the impact of YRE on costs, Pelavin (1979) found that the per school operating costs in California's Pajaro Unified School District were $13,000 less annually under YRE than they would have been had the schools been on the traditional calendar. Viewing the total school budget, including capital outlay, Pelavin reported that schools should be able to save about 8% of the total budget annually, which means taxpayers can expect one year of education free for every 13 years a YRE school is in operation (Pelavin, 1979).

Merino (1983), in reviewing several prior studies of YRE costs, reported even greater savings potential for YRE. She concluded that careful cost comparisons showed YRE costs would typically run 5 to 8% less, but that under special circumstances, overall savings may be as high as 15%. In another review, Shepard (1975) examined cost savings for YRE programs in nine districts in three states. All comparisons (which used a variety of comparative methods) favored YRE, although they ranged from only $8 saved per student in Virginia Beach, Virginia, through 9.6% savings in Prince William County, Virginia, to savings of $2,000,000 in building costs in Chula Vista, California, and 30.6% saved in building costs in Pajaro Valley, California.

Mussatti's (1981) study has frequently been cited by YRE opponents as showing that using YRE schedules is more expensive than using the traditional schedule. That is because, based on his analysis of four year-round high school programs, he concludes that "Implementation of year-round high school programs are [sic] more expensive *if potential building costs are not considered*" (p. 7, italics added). It is unclear from Mussatti's paper why he made this seemingly strange statement, for it is hard to envision a setting where cost of YRE could be of interest but the potential building costs it might save would be viewed as irrelevant. Later in his paper, however, he notes that "Millions of dollars in construction costs and debt retirement can be saved in districts which are still growing" (p. 15). Careful reading of Mussatti's paper shows he understands that YRE can, overall, save substantial sums in school budgets; unfortunately, those who cite this study as showing YRE is more expensive appear not to have read carefully or realized they have taken the statement quoted earlier out of context.

Summarizing the impact of YRE on costs. As shown in Table 7, prior studies show that costs of single-track YRE programs are, at best, no more than traditional scheduling and, at worst, are significantly more expensive. Prior studies show, however, that most carefully implemented multi-track YRE programs produce substantial overall savings in school budgets.

Some Concluding Thoughts

The preceding section summarizes, as best we can within the page limits for this paper, what prior studies of YRE have shown about its impact on several considerations important to every school administrator. Yet we need to know still more, and with still greater certainty, the ways in which various YRE plans will impact on various types of schools. Until more programmatic

Table 7
What Prior Studies Show About the Impact of YRE on Cost

(Overall, savings of total budget for multi-track YRE estimated at 2-8%, up to 15% in well-implemented, multi-track YRE schools.)

	Clustering of Evidence Seems to Center on:		
	Positive + (Favors YRE)	Neutral o or No Difference	Negative - (Favors Traditional)
Single-track YRE:			
Operating costs		O	-
Multi-track YRE:			
Operating costs		O	
Savings of capital outlay for new buildings	+		
Savings of personnel costs for new building	+		

research examines more thoroughly the various facets of YRE, we consider all the conclusions drawn in this paper as at least somewhat tentative. It is still too early to claim certainty in such conclusions.

This caution about premature certainty should not be misread as counseling inaction, however. Although tentative, we believe the patterns and trends we have reported in viewing the overall mosaic of prior YRE studies are not only intriguing, but are also the best guide for practice available at present. Indeed the overall trends in the prior studies of YRE will also guide future investigations that may lead to rejection or modification of some of the conclusions advanced herein. But until then, it is useful to reflect on what has been discussed in these pages and what it all means. Will the YRE schedule work for all districts? Are there things that will make it better in some districts and worse for others? And what about North Carolina schools--is YRE the answer for districts where enrollment increases are rapidly outrunning increments in school budgets? In districts where overcrowding is not an issue, is there merit in moving to YRE in an effort to enhance student achievement? Hopefully, answers to these and similar questions can be

found in the preceding pages of this paper. Perhaps a few final observations will also be of help.

Choices About YRE Will Invariably be Political

To say that YRE is an educational innovation influenced by political undercurrents is to greatly understate the case. Whenever innovations impact directly on professionals' prerequisites and patrons' preferences to the degree that YRE does, those political undercurrents can become treacherous for even the most experienced school administrators. When concerns about family vacations, child care, or personal income become intertwined with an educational innovation, the potential exists for policy making and day-to-day administrative decisions to be affected by capricious or mischievous influences. In such settings, even unequivocal data on the educational efficacy of the innovation sinks with barely a ripple into the sea of concern stakeholders feel about convenience, tradition, or security of the status quo.

With YRE, the situation can be exacerbated by some predictable motives for constructing new schools. Influential developers and realtors, knowing the importance of school location and perceived quality, press boards for new schools. Boards or administrators who feel a desire to leave a lasting mark may find that such a monument is more easily constructed from "bricks and mortar" than from the building blocks of curricular or instructional refinements. Awareness that a variety of personal motives and concerns may be entangled in any YRE decision may allow administrators to ply those political waters more smoothly and successfully.

Deciding Whether or Not to Embark on YRE

Political influences aside, what are the critical touchstones for deciding whether or not to launch a school on a YRE calendar? Though we began this paper in mid-stream, along the way we may have drifted to where we now find ourselves somewhat closer to the shore that is populated by the proponents of YRE, or at least we find ourselves closer to that shore when advising student-rich and budget-poor districts whether or not to try the YRE calendar. In such settings, we would lean toward giving YRE a try, for several reasons that flow directly from the summary of research we have presented herein. From prior research, our best judgments are that:

1. Students on YRE will do as well or better in academic achievement.
2. Students on YRE will likely exhibit better attitudes toward school.
3. Students on YRE are likely to have a bit better attendance (overall — not necessarily in the summer).
4. Somewhat fewer YRE students will drop out of school.
5. Teachers' attitudes under YRE will be somewhat better than under the traditional schedule.
6. YRE teachers will feel more professional and will welcome the opportunity for higher salaries (assuming a choice is given).
7. Teacher "burnout" on YRE programs will be somewhat less, although they may report more stress when in session.
8. A majority of parents will be favorable toward YRE, while a small minority will persist in resisting it.
9. Vandalism and burglary of school property is likely to decrease somewhat.

10. With the exception of single-track YRE programs, adopting YRE will result in significant cost savings.

Armed with these conclusions, we are more comfortable in advising North Carolina's educational leaders as to whether or not they would be wise to pursue YRE.

To these North Carolina districts not faced with bulging enrollments and shrinking budgets, we would suggest they make the choice based on whether they believe the modest achievement gains that they will likely attain are worth the increased fiscal costs of implementing single-track YRE or the time and effort and "opportunity cost"[5] of implementing a multi-track YRE program.

For North Carolina districts faced with overcrowding and/or budget shortfalls, we would suggest they carefully consider giving YRE a try. If the conclusions we have drawn from prior research prove to be accurate, then it seems such districts would have everything to gain and nothing to lose—or at least a great potential for gain and very little potential for loss—by doing so. Of course, that assumes two things. First, that the implementation and maintenance of the YRE program is carried out carefully, competently, and compassionately. (While such considerations are beyond the scope of this paper, there is a good section on YRE implementation in Williams, 1990). And second, that district administrators and school boards are not easily cowed by persistent and vocal minorities that will question the sanity—and possibly the ancestry—of everyone associated with the decision to adopt YRE.

Were we to reside in North Carolina,[6] we surely would be supportive of YRE in our district. Unless, of course, our children's or grandchildren's YRE schedules interfere with our vacation plans, or . . .

NOTES

[1]Of course, a school could both add days and then spread the total number of days across the year, with patterns similar to typical YRE programs. By our definitions, we would view such a program as being both a YRE and an extended attendance school.

[2]This paper, *A Compendium of Prior Studies of Year-round Education*, is available upon request from the North Carolina Educational Policy Research Center, CB#3500, Peabody Hall, University of North Carolina at Chapel Hill, Chapel Hill, NC 27599-3500.

[3]Hereafter in this section, we will not be discussing single-track YRE programs; for brevity, the term "YRE" will refer here only to *multi-track* programs.

[4]All of these studies compared actual YRE costs with simulated costs of using the traditional schedule in the same school, unless we note an alternate comparison method.

[5]The loss of an opportunity to do something else because of the time, energy, and resources expended in what you have chosen to do.

[6]A misfortune that nearly fell on the state when the senior author came very close to accepting a deanship at N.C. State, an experience that left a residue of fond feelings for the Tarheel state.

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APPENDIX A

Figure A-1

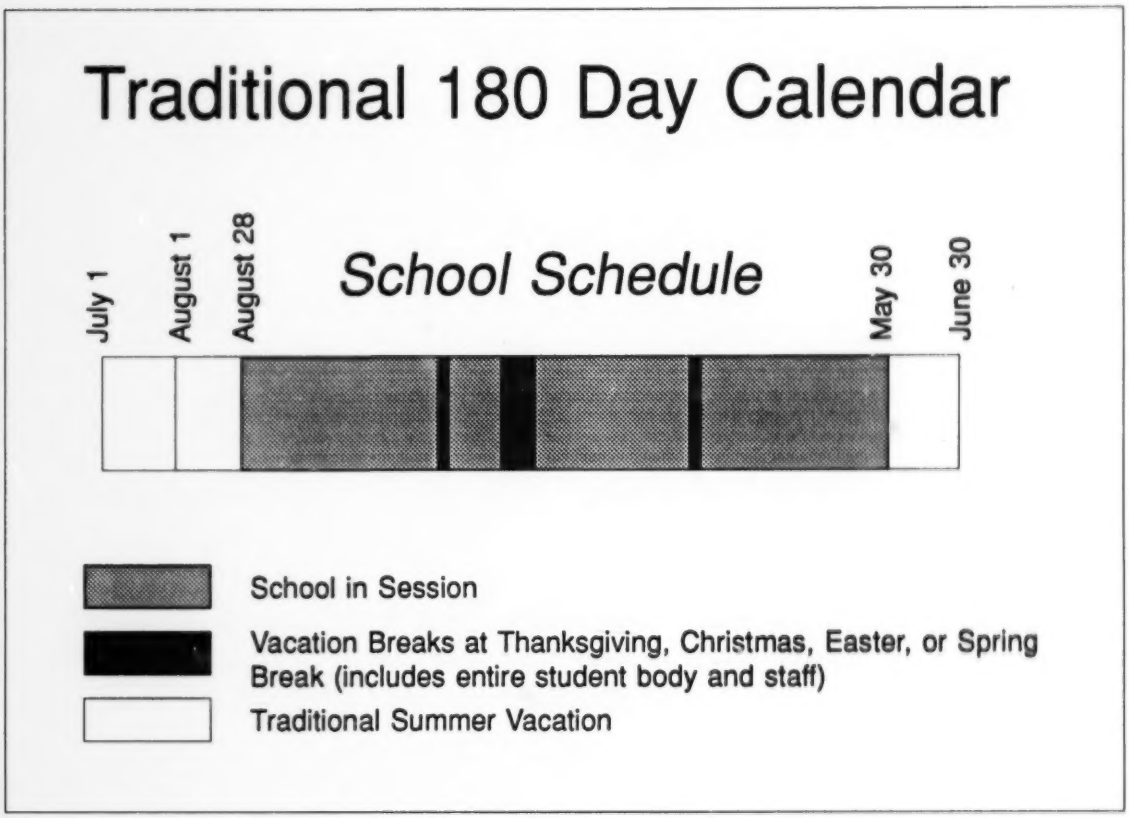


Figure A-2

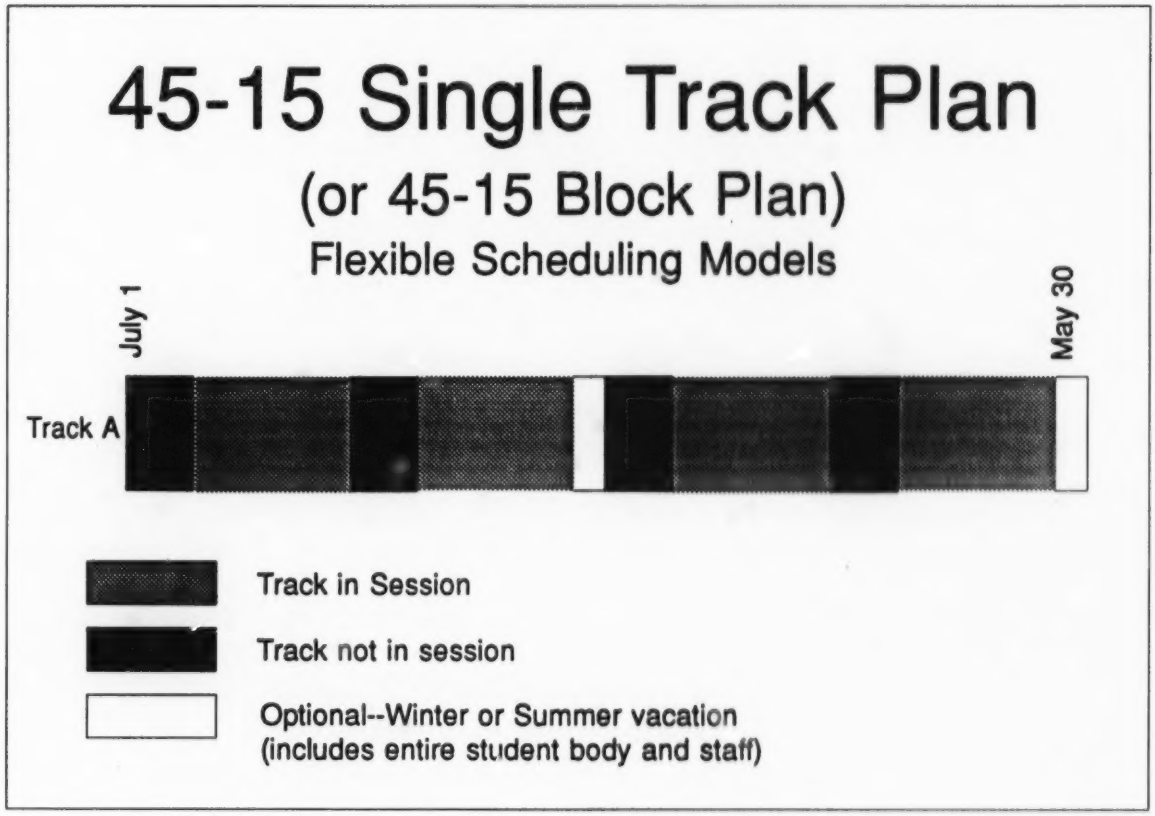
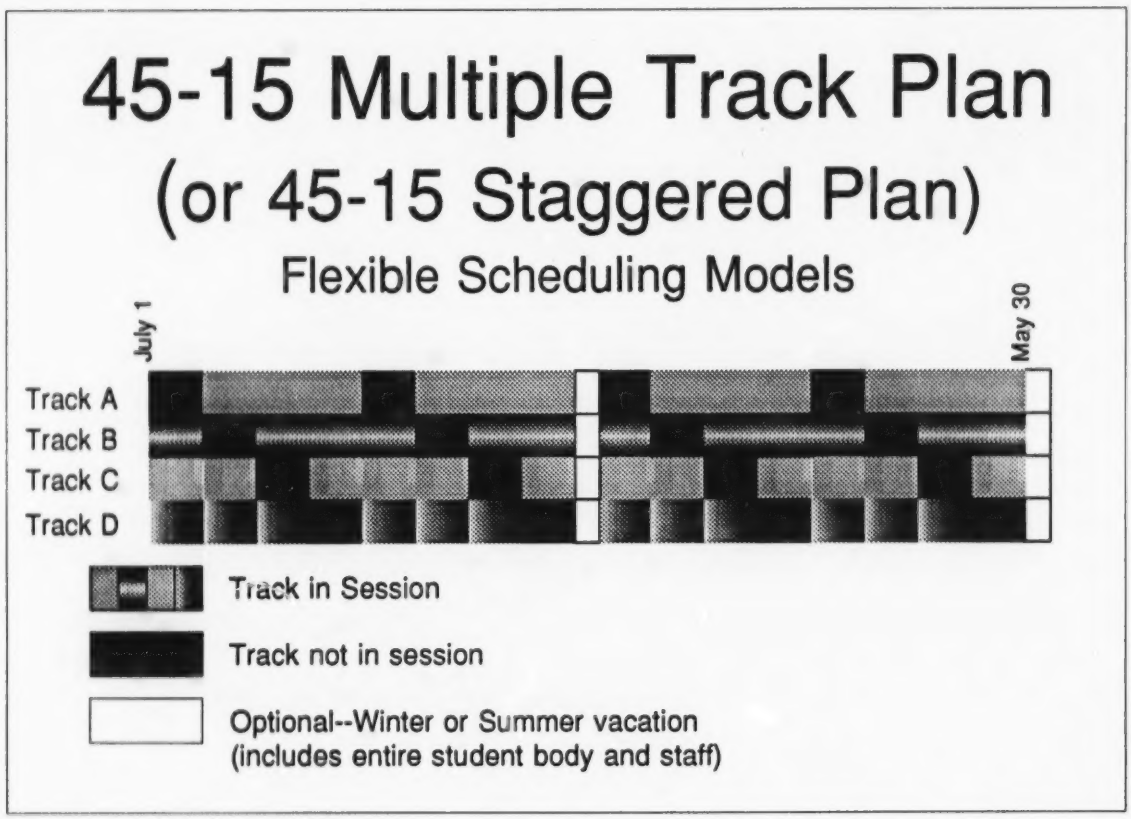

45-15 Single Track Plan
(or 45-15 Block Plan)
Flexible Scheduling Models
July 1
May 30
Track A
Track in Session
Track not in session
Optional--Winter or Summer vacation
(includes entire student body and staff)

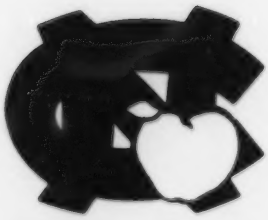
Figure A-3


45-15 Multiple Track Plan
(or 45-15 Staggered Plan)
Flexible Scheduling Models
July 1
May 30
Track A
Track B
Track C
Track D
Track in Session
Track not in session
Optional--Winter or Summer vacation
(includes entire student body and staff)

Introducing the Center

The North Carolina Educational Policy Research Center was established in 1991 through a contract to the School of Education at the University of North Carolina at Chapel Hill from the State Board of Education. The mission of the Center is to strengthen the information base for educational policy decisions in North Carolina to enhance outcomes of schooling for children. The Center seeks to accomplish this mission by:

- conducting policy research and analyses;
- preparing research reports examining broad policy issues, policy briefs providing concise information about specific issues, and quarterly newsletters;
- disseminating research-based information on educational policy issues to North Carolina policymakers, educators and community leaders;
- providing a forum for the discussion of educational policy issues; and,
- training future educational leaders in the conduct and use of policy research.



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